Jasminum inodorum Jacquemont apud Decaisne in Jacquemont, Voy. **4**: 137, t. 143. 1843.— DeCandolle, Prodr. **8**: 312. 1844.

China. Szechuan: *Harry Smith 2463; E. H. Wilson 2809,* (Veitch Exped.) *4077, 4078.* Yunnan: *Simeon Ten 375, 515.*

Persia: Teheran, on road to Doshan-tepe, ex *Herb. Bornmüller.*

This was known to Linnaeus and his predecessors only as a cultivated plant. Its habitat has generally been given as southeastern Europe and Persia, but its spontaneous occurrence there has been doubted (see Boissier, l. c.). It is highly probable that *Jasminum humile* is a native of western China and was introduced, as were *Syringa persica* L., *Prunus Persica* (L.) Batsch and *P. Armeniaca* L. (cf. Laufer, Sino-iranica, 359 ff.; also Rehder in Jour. Arnold Arb. **5**: 214. 1924) over the ancient trade route from China to Persia where these plants are found now as escapes from cultivation.

This species, as accepted by some authors in the broad sense, includes the very closely related species *J. revolutum* and *J. Wallichianum* and makes a very variable unit. On the other hand, when this combined unit is separated into three individual species, as it is generally in horticultural literature, the worker is confronted with considerable overlapping among species. Careful study of the literature shows, as far as I know, no separation by varieties as I am making in this paper. Formerly, because of the overlapping of species, I included all three in one species.

The typical form of the species is characterized by 3–5, rarely 7, leaflets which are ovate to elliptic to oblong and usually 2 cm. or less in length. The terminal leaflet is usually obtuse at the apex. The inflorescence is composed of few flowers (2–6) as contrasted with the many-flowered inflorescences of var. *revolutum*.

Jasminum humile L. var. **kansuense**, var. nov.

A typo differt foliolis late ovalibus vel ellipticis vel obovatis; calycis lobis subulato-setaceis 1–2 mm. longis, tubo subaequalibus; floribus non visis.

China: Southwestern Kansu, Lower Tebbu country, dry arid slopes with oaks in Nyibaku, alt. 6800 ft., *J. F. Rock 14797,* type, September 9, 1926 (shrub 4–5 ft. with rich green leaves and yellow flowers).— Also, same general locality, *J. F. Rock 14653, 15035.*

This variety resembles the type of the species more closely than any of the other varieties in all respects save the calyx-lobes. While they are hardly more than mere triangular projections in the species, in var. *kansuense* they are subulate-setaceous, 1–2 mm. long, equalling and in some instances exceeding the calyx-tube in length. The leaves are

usually 3-foliolate, occasionally 5-foliolate and sometimes, near the base of the branchlets, unifoliolate.

Closely related is *J. fruticans* L. which can be separated from var. *kansuense* by its much longer calyx-lobes that have a slight tendency to be foliaceous and by its spathulate leaves which are always 3-foliolate or occasionally uni-foliolate, never 5-foliolate. Also, its range does not extend into China.

Jasminum humile L. var. **siderophyllum** (Léveillé), comb. nov.

Jasminum Mairei Léveillé in Fedde, Rep. Spec. Nov. **13**: 337. 1914.
Jasminum Mairei Léveillé var. *siderophyllum* Léveillé, Cat. Pl. Yunnan, 179. 1916.

YUNNAN: haut plateau de Tai hai, alt. 3200 m., *E. E. Maire s.n.* (MEROTYPE of *J. Mairei* var. *siderophyllum*), Juillet [1911–1913], (arbuste buissonant, haut 0.60 m.; fl. roses); patûrages des montagnes à Pé-ling-tsin; alt. 3200 m., *E. E. Maire s.n.* (MEROTYPE of *J. Mairei*), (Jasm. buissonant, haut 0.60 m.; fl. jaunes inodores). Other Yunnan collections, *E. E. Maire 245; H. T. Tsai 53684, 57305, 57352, 57578, 57735; J. F. Rock 3293, 24705; G. Forrest 4659; O. Schoch 36; C. Schneider 3222, 3264.* SZECHUAN: *Harry Smith 1890; J. F. Rock 24144, 24564; T. T. Yü 1049; H. Handel-Mazzetti 2223, 2498; C. Schneider 1302; 4091.*

This variety is characterized by leaves with 3–5 leaflets (usually 5) which resemble var. *glabra* in the ovate-lanceolate shape. The terminal leaflet is subcaudate. A sparse appressed setose pubescence is found on the upper surface of the leaflets and especially on the revolute margin where in some instances it appears spinulose. In specimens which are nearly glabrous, this spinulose character of the margin can still be found.

The calyx-lobes are short, usually somewhat triangular, much shorter in length than the calyx-tube and somewhat ciliate. Like the species and all the other varieties, the stems are angled.

In all specimens with flowers, except for the type, the color is recorded as yellow. In the type specimen it is recorded as "roses." I feel quite certain that this is an error, because it appears, in the dried state, no different from all the other specimens.

Léveillé gave the name *siderophyllum* to his variety because the leaves were ferrugineous on the lower surface. Although it is true for the type, this character hardly holds for the whole variety. Many specimens are ferrugineous on the lower surface, yet on the other hand, others may be a pale green.

This variety has been cultivated in the United States for about thirty years.

Jasminum humile L. var. **revolutum** (Sims), comb. nov.

Jasminum revolutum Sims in Bot. Mag. **42**: t. 1731. 1815.— Ker in Bot. Reg. **3**: t. 178. 1817; **6**: Notes 2. 1820.— Loddiges, Bot. Cab. **10**: t. 966. 1824.— DeCandolle, Prodr. **8**: 313. 1844.— Wight, Icon. Pl. Ind. Orient. **4**: 14, t. 1258. 1850.— Boissier, Fl. Or. **4**: 42. 1875.— Schneider, Ill. Handb. Laubholzk. **2**: 839, figs. 527 m-n, 528 g-i. 1911.

Jasminum chrysanthemum Roxburgh, Cat. Hort. Beng. 3. 1814, nomen; Fl. Ind. **1**: 98. 1820.

India. West Nepal: *Bis Ram 147, 360, 462.* Punjab: *W. Koelz 214, 1889; R. R. Stewart 2467; R. N. Parker s.n.; C. S. Rowat 77.* Kashmir: *E. H. Wilson s.n.*

This variety is characterized by a many-flowered inflorescence with corolla-limb 2–2.5 cm. across and by leaflets 5–7 in number, ovate, acuminate 2–6 mm. long.

Among the specimens cited above, a few, namely *Koelz 214*, *Rowat 79*, *Stewart 2467* and *Ram 360* showed a marked similarity to the type of the species making it difficult to decide definitely in which category to place them. Both *Koelz 214* and *Ram 360* have leaflets somewhat obtuse, occasionally to seven or nine, a number which is unusually high for the species.

This variety, it appears from the material at hand, is more successfully or preferably cultivated than the species itself, or any of its other varieties. In the herbarium of the Arnold Arboretum are excellent specimens from England, Germany, Austria, France, United States and Argentina.

Jasminum humile L. var. **glabrum** (DC.), comb. nov.

Jasminum Wallichianum Lindley in Bot. Reg. **17**: t. 1409. 1831.— Bean, Trees Shrubs Hardy Brit. Isl. **1**: 662. 1914.

Jasminum pubigerum D. Don β *glabrum* DC. Prodr. **8**: 312. 1844.

Jasminum pubigerum sensu Loudon, Arb. Frut. Brit. ed. 2, **2**: 1250, fig. 1077. 1854. Non D. Don.

Distribution: Nepal.

No spontaneous representatives of this variety have been seen by the author. Authentic cultivated specimens from Germany, France, England and United States have been studied.

The pinnate leaves of this variety have 7–13 leaflets which are ovate to lanceolate, 2–5 cm. long. The terminal leaflet is usually quite caudate. The inflorescence is few-flowered (three are the maximum in specimens studied). These characters mentioned easily separate it from var. *revolutum*.

The name var. *glabrum*, although necessary, is an unfortunate name because both the species and var. *revolutum* are usually strictly glabrous. It would be better to use Lindley's specific epithet for the name of the

variety, but according to the rules of nomenclature, the oldest varietal epithet must be used which is DeCandolle's *J. pubigerum* var. *glabrum*.

Jasminum pubigerum D. Don is separated only by its pubescence. One wonders how pubescent the actual type may be! DeCandolle evidently did not see the type of *J. pubigerum* when he incorporated the species in his Prodromus; the only material he saw was glabrous and from that he named his variety. His description of *J. pubigerum* is drawn up from D. Don's description and with the exception of transposed phrases is identical.

G. Don (Gen. Syst. Gard. Bot. **4**: 64. 1837) and Loudon (Arb. Frut. Brit. ed. 2, **2**: 1250, fig. 1077. 1854) consider *J. Wallichianum* synonymous with *J. pubigerum*.

ARNOLD ARBORETUM,
HARVARD UNIVERSITY.

NEW SPECIES, VARIETIES AND COMBINATIONS FROM THE COLLECTIONS OF THE ARNOLD ARBORETUM

Alfred Rehder

Sequoiadendron giganteum (Lindl.) Buchholz f. **pendulum** (Carr.), comb. nov.

Wellingtonia pendula Carrière in Rev. Hort. **1870–71**: 526 (Sept. 1871).

Wellingtonia gigantea pendula [Otto in] Hamburg. Gart. u. Blumenzeit. **27**: 573 (Dez. 1871).— Bellair in Rev. Hort. **1906**: 394, fig. 157 (1906).

Sequoia gigantea var. *pendula* Lavallée, Arb. Segrez. 271 (1877).— Rehder in Möller's Deutsch. Gärtn.-Zeit. **17**: 133, fig. (1902).— Henry in Elwes & Henry, Trees Gt. Brit. Irel. **3**: 700 (1908).— Roeding in Gard. Chron. ser. III. **78**: 107, fig. 41 (1925).

Wellingtonia gigantea pendula vera Anon. in Jour. For. Lond. **3**: 260 (1879).— Henry in Elwes & Henry, Trees Gt. Brit. Irel. **3**: 701, footnote (1908).

Sequoia gigantea pendula Nicholson, Ill. Dict. **3**: 422 (1887).

Sequoia Washingtoniana pendula (Beissn.) Sudworth in Bull. U. S. Div. For. **14**: 62 (Nomencl. Arb. Fl. U. S.) (1897).

Sequoia Wellingtonia var. *pendula* Kent. Veitch's Man. Conif. ed. 2. 275 (1900).— M. L. Green in Kew Hand-list Conif. ed. 4, 70 (1938).

Sequoia gigantea Barroni pendula Henry in Elwes & Henry, Trees Gt. Brit. Irel. **3**: 701 (1908).

This distinct and striking form was first mentioned by Carrière in 1871, who saw a plant 1.30 m. tall with reflexed branches forming a compact cone. As stated by the writer (l. c.) it was found in a seed-bed by Lalande of Nantes and put on the market by Paillet of Chatenay-les-Sceaux near Paris.

The new combination made above is necessary if one accepts the generic separation proposed by Buchholz (in Am. Jour. Bot. **26**: 536. 1939) of *Sequoia Wellingtonia* (Lindl.) Seem. (*S. gigantea* Dcne., not Endl.) and *S. sempervirens* Endl. which appears to be well founded, and in my opinion should be accepted.

The best tree of this form is, or was growing in the Arboretum de la Maulévrie, formerly M. Allard's arboretum, at Angers in France where I saw and photographed it in 1901. At that time, it was 18.5 m. tall and the trunk 80 cm. in girth; in 1907 it was measured by Mr. H. J. Elwes

(See Henry, l. c.) and was found to be 44 ft.[1] tall and around the branches at the base only 13 ft. in circumference. Similar pendulous forms have originated elsewhere and are listed as *Wellingtonia gigantea pendula vera* and *Sequoia gigantea Barroni pendula* (see above).

Besides this form, a number of other forms have been recorded from cultivation under various names, some of them apparently synonyms; the following named forms which appeared in horticultural literature are given under the combination under which they were first mentioned: *Gigantabies Wellingtoniana argentea, G. W. aurea, G. W. elegantissima* and *G. W. nobilissima* Nelson (1866), *Wellingtonia gigantea aureo-compacta* Carr. (1867), *W. g. flavescens* Beissn. (1884), *W. g. gracilis* Otto (1866), *W. g. pygmaea* Otto (1866), *W. g. stricta* Sénécl. (1868), *W. g. variegata* Hort. ex Carr. (1867), *Sequoia gigantea columnaris* Schelle (1909), *S. g.* var. *crassifolia* Lav. (1877), *S. g. glauca* Otto (1860), *S. g. Holmesii* P. Sm. ex Beissn. (1891), *S. g. lutea* Beissn. (1891), *S. g.* var. *nana* Zederb. (1907), *S. g.* var. *pyramidalis* Lav. (1877), *S. g. pyramidata compacta* Nichols. (1900), *S. glauca pyramidalis compacta* Otin ex Chargeraud (1889), *S. Washingtoniana glaucescens pyramidato-compacta* Sudw. (1897). I have seen none of these forms and many have probably disappeared from cultivation, or can now be found only in a few collections.

Betula platyphylla Sukatchev in Trav. Mus. Bot. Acad. Sci. St. Petersb. **8:** 220, pl. 3 (1911).— Hara in Jour. Jap. Bot. **13:** 384 (1937).

Betula alba L. subsp. 4. *latifolia* α. *Tauschii* Regel in Bull. Soc. Nat. Moscou, **38**[2]: 399, t. 7, fig. 11–14 (1865); in DC. Prodr. **16**[2]: 165 (1868); non *B. latifolia* Tausch.

Betula latifolia sensu Komarov in Act. Hort. Petrop. **22:** 38 (Fl. Mansh. II) (1903), non Tausch.

Betula mandshurica (Reg.) Nakai in Bot. Mag. Tokyo, **29:** 42 (1915).

Betula platyphylla Sukatchev is apparently the correct name for the group of birches classed by Winkler under Siebold's nomen nudum *B. japonica* which is untenable on account of the earlier homonym *B. japonica* Thunb., a synonym of *Alnus japonica* (Thunb.) Sieb. & Zucc. Early in 1938, when I took up Nakai's binomial *B. mandshurica* (Reg.) of 1915, neither Sukatchev's publication of 1911 nor that of Hara of 1937 was in our library, and I did not know of the combinations made by Hara until we received volume 13 of the Journal of Japanese Botany late in 1938.

[1]The two measurements show a considerable discrepancy, the height being less in 1907 than in 1901; either one of the measurements was incorrect or the top of tree had died back which is not unlikely, since my original photograph shows dry branches at the very top, scarcely visible in the reproduction.